

TB MED 530

TECHNICAL BULLETIN

Occupational and Environmental Health
Food Sanitation

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

30 October 2002

TECHNICAL BULLETIN
No. MED 530

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 30 October 2002

OCCUPATIONAL AND ENVIRONMENTAL HEALTH FOOD SANITATION

You can help improve this bulletin. If you find any mistakes or if you know a way to improve procedures, please let us know. Send your comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to USACHPPM, ATTN: MCHB-CS-OSD, 5158 Blackhawk Road, Aberdeen Proving Ground, MD 21010-5403.

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION IS UNLIMITED

		Paragraph	Page
CHAPTER 1.	OVERVIEW		
	Purpose	1-1	1-1
	References	1-2	1-1
	Explanation of abbreviations and terms.....	1-3	1-1
	History	1-4	1-1
	Information to assist the user	1-5	1-2
	Procedures	1-6	1-2
CHAPTER 2.	MANAGEMENT AND PERSONNEL		
Section I.	Supervision		
	Person-in-charge	2-1	2-1
	Demonstration of knowledge	2-2	2-1
	Duties of person-in-charge.....	2-3	2-2

*This bulletin supersedes TB MED 530, November 1991.

	<i>Paragraph</i>	<i>Page</i>
Section II.	Employee Health	
	Reportable information	2-4
	Employee exclusions and restrictions	2-5
	Removal of exclusions and restrictions	2-6
	Reporting by the person-in-charge	2-7
Section III.	Personal Cleanliness	
	Hands and exposed arms, clean condition	2-8
	Where to wash	2-9
	Hand sanitizers	2-10
	Fingernail maintenance	2-11
	Jewelry prohibition	2-12
	Outer clothing condition	2-13
Section IV.	Hygienic Practices	
	Eating, drinking, or using tobacco	2-14
	Discharges from the eyes, nose, and mouth	2-15
	Hair restraints effectiveness	2-16
	Handling prohibition	2-17
Section V.	Training	
	Supervisor's or person's-in-charge training	2-18
	Food employee's training	2-19
CHAPTER 3.	FOOD	
Section I.	Characteristics	
	Safe, unadulterated, and honestly presented	3-1
	Served to highly susceptible populations	3-2
Section II.	Sources, Specifications, Original Containers, and Records	
	Food supplies	3-3
	Approved source compliance	3-4
	Temperature	3-5
	Additives	3-6
	Package integrity	3-7
	Shucked shellfish, packaging and identification	3-8
	Shellstock identification	3-9
	Shellstock, condition	3-10
	Molluscan shellfish, original container	3-11
	Shellstock, maintaining identification	3-12
Section III.	Protection From Contamination After Receiving	
	Preventing contamination from hands	3-13
	Preventing contamination when tasting	3-14
	Preventing contamination of packaged and unpackaged food	3-15
	Food storage containers, identified with common name of food	3-16
	Pasteurized eggs, substitute for raw shell eggs for certain recipes	3-17
	Pasteurized dry milk, substitute for fresh milk for certain recipes	3-18
	Protection from unapproved additives	3-19
	Washing fruits and vegetables	3-20
	Ice used as exterior coolant, prohibited as ingredient	3-21
	Storage or display of food in contact with water or ice	3-22
	Ice storage and dispensing protection	3-23
	Food contact with equipment and utensils	3-24
	In-use utensils, between-use storage	3-25
	Linens and napkins, use limitation	3-26
	Preventing contamination from wiping cloths	3-27
	Gloves, use limitation	3-28
	Using clean tableware for second portions and refills	3-29
	Refilling returnables	3-30
	Protection of food during storage	3-31
	Food storage, prohibited areas	3-32

	<i>Paragraph</i>	<i>Page</i>	
Vended PHF, original container	3-33	3-7	
Food preparation	3-34	3-7	
Food display	3-35	3-7	
Condiments, protection	3-36	3-7	
Consumer self-service operations	3-37	3-8	
Returned food, reservice or sale	3-38	3-8	
Dispensing of milk, cream, and nondairy products	3-39	3-8	
Dispensing of cereal and breads	3-40	3-8	
Protecting from miscellaneous sources of contamination	3-41	3-8	
Section IV.			
Destruction of Organisms of Public Health Concern			
Cooking raw animal foods	3-42	3-9	
Microwave cooking	3-43	3-9	
Plant food cooking for hot holding	3-44	3-9	
Parasite destruction	3-45	3-9	
Records, creation and retention	3-46	3-9	
Reheating for immediate service	3-47	3-10	
Reheating for hot holding	3-48	3-10	
Section V.			
Limitation of Growth of Organisms of Public Health Concern			
Frozen food	3-49	3-10	
PHF, slacking	3-50	3-10	
Thawing	3-51	3-10	
Cooling	3-52	3-10	
Cooling methods	3-53	3-11	
PHF, hot and cold holding or display	3-54	3-11	
Ready-to-Eat, PHF, date marking and disposition	3-55	3-11	
Sandwiches, date marking	3-56	3-12	
Leftover disposition	3-57	3-13	
Time as a public health control	3-58	3-13	
Variance requirement	3-59	3-13	
Reduced oxygen packaging, criteria	3-60	3-13	
Section VI.			
Food Identity, Presentation, and On-Premises Labeling			
Standards of identity	3-61	3-14	
Honestly presented	3-62	3-14	
Food labels	3-63	3-14	
Other forms of information	3-64	3-14	
Consumption of raw or uncooked animal foods	3-65	3-15	
Section VII.			
Special Requirements			
Discarding or reconditioning unsafe, adulterated, or contaminated food	3-66	3-15	
Additional safeguards: pasteurized foods, prohibited reservice, and prohibited food	3-67	3-15	
CHAPTER 4.	EQUIPMENT AND UTENSILS		
Section I.	General Standards		
	Equipment source requirements	4-1	4-1
	Compliance measures	4-2	4-1
Section II.	Materials for Construction and Repair		
	Material characteristics	4-3	4-2
	Cast iron, use limitation	4-4	4-2
	Lead in ceramic, china, and crystal utensils, use limitation	4-5	4-2
	Copper, use limitation	4-6	4-2
	Sponges, use limitation	4-7	4-2
	Lead in solder and flux, use limitation	4-8	4-2
	Wood, use limitation	4-9	4-2
	Plastics	4-10	4-2
	Mollusk and crustacean shells, use limitation	4-11	4-3
	Applying paint	4-12	4-3
	Nonstick coatings, use limitation	4-13	4-3

	<i>Paragraph</i>	<i>Page</i>
	Nonfood-contact surfaces.....	4-14
	Single-service, single-use articles, material characteristics	4-15
Section III.	Sealing Compounds	4-16
	Requirements	4-16
	Uses	4-17
Section IV.	Equipment and Utensil Design and Fabrication	
	Food contact equipment design, strength, and cleanability	4-18
	Nonfood-contact surfaces design and cleanability	4-19
	Clean-in-place equipment	4-20
	Pressure spray cleaning	4-21
	"V" threads, use limitation	4-22
	Bearings and gear boxes, leakproof.....	4-23
	Beverage tubing separation	4-24
	Bulk dispensers.....	4-25
	Hot oil filtering equipment	4-26
	Can openers	4-27
	Kick plates, removable	4-28
	Equipment compartment drainage.....	4-29
	Case lot handling equipment	4-30
	Temperature measuring devices	4-31
Section V.	Equipment installation and location	
	General installation	4-32
	Equipment, clothes washers and dryers and storage cabinets location	4-33
	Fixed equipment installation, spacing or sealing	4-34
	Fixed equipment, elevation	4-35
	Wiping cloths	4-36
	Steel wool	4-37
Section VI.	Maintenance and Replacement	
	Good repair and operation	4-38
	Maintenance programs	4-39
Section VII.	Equipment and Utensil Cleaning and Sanitizing	
	Cleaning frequency of equipment and utensils	4-40
	Manual cleaning and sanitizing equipment	4-41
	Precleaning	4-42
	Manual washing and rinsing procedures	4-43
	Manual warewashing equipment, chemical sanitization using detergent- sanitizer combination	4-44
	Determining chemical sanitizer concentration	4-45
	Mechanical cleaning and sanitizing	4-46
	Drying	4-47
	Returnables, cleaning for refilling	4-48
Section VIII.	Equipment and Utensil Handling and Storage	
	Handling	4-49
	Storage	4-50
	Kitchenware and tableware	4-51
	Soiled and clean tableware	4-52
	Preset tableware	4-53
CHAPTER 5	SANITARY FACILITIES AND CONTROLS	
Section I.	Water Supply	
	Water source and installation support.....	5-1
	Nondrinking water	5-2
	Culinary purposes	5-3
	Hot water	5-4
	Water under pressure	5-5
	System flushing and disinfection	5-6
	Surveillance	5-7

	<i>Paragraph</i>	<i>Page</i>
Section II.	Transportation 5-8 Bottled water 5-9 Steam Authorized use 5-10 Prohibited use 5-11	5-1 5-2 5-2 5-2
Section III.	Sewage Approved disposal systems 5-12 Prohibited disposal systems 5-13	5-2 5-2
Section IV.	Plumbing General requirements 5-14 Cross-connection 5-15 Backflow and back siphon prevention 5-16 Grease traps 5-17 Food-waste grinders and pulpers 5-18 Floor drains 5-19	5-2 5-2 5-2 5-3 5-3 5-3
Section V.	Toilet Facilities Installation 5-20 Design 5-21 Fixtures 5-22 Signs 5-23 Ventilation 5-24	5-3 5-3 5-3 5-3 5-4
Section VI.	Handwashing Facilities Location 5-25 Handwashing sink limitation and restriction 5-26	5-4 5-4
Section VII.	Faucets and supplies 5-27 Garbage, Refuse and Recyclables Receptacles 5-28 Storage 5-29 Collection and disposal 5-30	5-4 5-4 5-4 5-5 5-5
Section VIII.	Integrated Pest Management — Food Service Introduction 5-31 Structural design 5-32 Surveillance inspections 5-33 Stock handling practices 5-34 Premises pest exclusion 5-35 Nonchemical control methods 5-36 Chemical control methods 5-37	5-5 5-5 5-5 5-6 5-6 5-6 5-7
Section IX.	Linens Clean linens and clothes storage 5-38 Soiled linens and clothes storage and laundering 5-39 Laundering of linens 5-40	5-7 5-7 5-7
CHAPTER 6.	CONSTRUCTION AND MAINTENANCE OF FOOD ESTABLISHMENTS	
Section I.	Criteria Standards and design 6-1 Paint 6-2	6-1 6-1
Section II.	Floors Construction and maintenance 6-3 Carpeting 6-4 Mats and duckboards 6-5 Prohibited floor coverings 6-6 Floor drains 6-7 Cleaning floors, dustless methods 6-8	6-1 6-1 6-1 6-1 6-1 6-2
Section III.	Walls and Ceilings Construction 6-9 Maintenance 6-10 Exposed construction 6-11 Attachments 6-12	6-2 6-2 6-2 6-2
Section IV.	Utility and Service Line Installation Openings through walls, floors, and ceilings 6-13 Exposed utility and service lines 6-14	6-3 6-3

		<i>Paragraph</i>	<i>Page</i>
Section V.	Cleaning Facilities and Premises		
	Repair and cleaning frequency	6-15	6-3
	Custodial and maintenance facilities	6-16	6-3
Section VI.	Lighting		
	Lighting intensity	6-17	6-4
	Protective shielding	6-18	6-4
Section VII.	Ventilation		
	Introduction.....	6-19	6-4
	Exhaust rates	6-20	6-4
	Filters on grease removal devices	6-21	6-5
	Cleaning grease removal devices	6-22	6-5
Section VIII.	Dressing Rooms, Lockers, and Premises		
	Designated dressing rooms and locker areas	6-23	6-5
	General premises	6-24	6-5
	Living areas	6-25	6-5
	Live Animals	6-26	6-6
	Plants	6-27	6-6
CHAPTER 7.	MOBILE FOOD ESTABLISHMENTS		
Section I.	General Provisions		
	Training.....	7-1	7-1
	Requirements	7-2	7-1
	Pre-approval inspections.....	7-3	7-1
	General structural requirements.....	7-4	7-1
Section II.	Food		
	General food requirements	7-5	7-2
	Limited-menu mobile food establishments	7-6	7-2
	Beverages	7-7	7-2
	Ice	7-8	7-2
	Single-service, single-use articles	7-9	7-3
Section III.	Water Tank, Sewage Retention System		
	Water system	7-10	7-3
	Sewage retention tank	7-11	7-3
	Cleaning potable water and sewage retention systems	7-12	7-3
	Solid waste	7-13	7-3
Section IV.	Servicing Food Establishment		
	Fixed servicing food establishment	7-14	7-4
	Servicing operations	7-15	7-4
CHAPTER 8.	TEMPORARY FOOD SERVICE ESTABLISHMENT		
Section I.	General Provisions		
	Training.....	8-1	8-1
	Requirements	8-2	8-1
	Pre-approval inspections.....	8-3	8-1
	General structural requirements.....	8-4	8-1
Section II.	Food		
	General food requirements	8-5	8-2
	Limited-menu temporary food establishments	8-6	8-3
	Beverages	8-7	8-3
	Ice	8-8	8-3
	Single-service, single-use articles	8-9	8-3
Section III.	Water Tank, Sewage Retention System		
	Water system	8-10	8-3
	Sewage disposal	8-11	8-4
	Cleaning potable water and sewage retention systems	8-12	8-4
	Solid waste	8-13	8-4
Section IV.	Servicing Food Establishment		
	Fixed servicing food establishment	8-14	8-4
	Servicing operations	8-15	8-5

	<i>Paragraph</i>	<i>Page</i>
CHAPTER 9.	FIELD FOOD SERVICE	
Section I.	General Provisions	
Introduction.....	9-1	9-1
General structural requirements.....	9-2	9-1
Section II.	Food	
General food requirements	9-3	9-2
Raw fruits and vegetables	9-4	9-2
Section III.	Personnel Health and Hygiene	
Personal hygiene	9-5	9-3
Applicable publications	9-6	9-3
CHAPTER 10.	VENDING MACHINE OPERATIONS	
Section I.	General Standards	
Introduction.....	10-1	10-1
Exclusive vending machine terms	10-2	10-1
Certificate of compliance	10-3	10-1
Compliance measures	10-4	10-1
Training.....	10-5	10-1
Section II.	Equipment Design and Fabrication	
Interior cabinet openings.....	10-6	10-2
Exterior cabinet openings	10-7	10-2
Dispensing nozzles, tubes and chutes	10-8	10-2
Exterior construction and maintenance	10-9	10-2
Condenser unit, separation	10-10	10-3
Temperature measuring devices	10-11	10-3
Vending machines, automatic shutoff	10-12	10-3
Ventilation system.....	10-13	10-3
Equipment compartments, drainage.....	10-14	10-3
Can openers on vending machines.....	10-15	10-3
Kick plates, removable	10-16	10-3
Vending support equipment.....	10-17	10-3
Vending machine maintenance and operation	10-18	10-3
Section III.	Vending Machine Installation and Location	
Location selection	10-19	10-4
Free-standing vending machines, installation.....	10-20	10-4
Table-mounted vending machines, installation	10-21	10-4
Openings through walls, floors, and ceilings	10-22	10-4
Floors.....	10-23	10-4
Section IV.	Food and Single-Service, Single-Use articles	
General food requirements	10-24	10-4
Frozen food vending	10-25	10-5
Condiments	10-26	10-5
Fresh fruits	10-27	10-5
Vending machine food disposition	10-28	10-5
Single-service, single-use articles	10-29	10-5
Section V.	Sanitary Facilities and Controls	
Water supply.....	10-30	10-6
Carbonator backflow prevention	10-31	10-6
Handwashing facilities	10-32	10-6
Liquid waste disposal	10-33	10-6
Refuse disposal.....	10-34	10-6
Section VI.	Vending Machine Cleaning and Sanitizing	
Cleaning frequency of vending machines	10-35	10-7
Manual cleaning	10-36	10-7
CIP systems	10-37	10-7
CHAPTER 11.	POISONOUS OR TOXIC MATERIALS	
Section I.	Hazardous Communication, Labeling and Identification	
Hazardous communication	11-1	11-1
Original and working containers, identifying information	11-2	11-1

	<i>Paragraph</i>	<i>Page</i>
Section II.	Operational Supplies and Application Poisonous or toxic materials presence Separation Conditions of use Poisonous or toxic material containers prohibitions Chemical sanitizers, criteria Chemicals for washing fruits and vegetables, criteria Boiler water additives, criteria Drying agents, criteria Lubricants, incidental food contact, criteria Restricted use pesticides, criteria Rodent bait stations Tracking powders, pest control and monitoring Personal care items, medicines, and first-aid supplies, restriction and storage Storage and display separation	11-3 11-4 11-5 11-6 11-7 11-8 11-9 11-10 11-11 11-12 11-13 11-14 11-15 11-16
CHAPTER 12.	ADMINISTRATIVE PROCEDURES, COMPLIANCE AND ENFORCEMENT	
Section I.	Applicability Public health protection Preventing health hazards, provision for conditions not addressed	12-1 12-2
Section II.	Variances Modifications and waivers Demonstration of conformance with approved procedures	12-3 12-4
Section III.	Plan Submission and Approval When food establishment and operating plans are required Contents of the plans and specifications When an HACCP Plan is required..... Contents of an HACCP Plan..... Confidentiality of trade secrets..... Preoperational inspections	12-5 12-6 12-7 12-8 12-9 12-10
Section IV.	Inspection of Food Establishments and Correction of Violations Philosophy of inspection Self Evaluations Access to food establishments Inspection types Inspection frequency Conducting inspections..... Rating food establishments Follow-up inspections..... Imminent health hazard, ceasing operations	12-11 12-12 12-13 12-14 12-15 12-16 12-17 12-18 12-19
	Resuming operations after an imminent health hazard..... Timeframe for correction	12-20 12-21
	Inspection of atypical food service food establishments	12-22
Section V.	Inspection Reports Inspection forms Inspection form distribution Troop dining food establishments..... AAFES food establishments	12-23 12-24 12-25 12-26
	NAF food establishments	12-27
	USACHPPM	12-28
Section VI.	Vending Machine Administrative Procedures Approval	12-29
	Identity	12-30
	Operator procedures	12-31

	<i>Paragraph</i>	<i>Page</i>
Suspension of approval.....	12-32	12-8
Inspection form distribution, vending machine activities	12-33	12-9
Section VII.		
Prevention of Foodborne Disease Transmission by Employees		
Obtaining Medical Information for Investigation and Control	12-34	12-9
Restriction or exclusion of food employee	12-35	12-9
Restriction or exclusion order	12-36	12-9
Release of employee from restriction or exclusion	12-37	12-9
APPENDIXES A. REFERENCES		A-1
B. MODEL RISK ASSESSMENT PLAN FOR SCHEDULING FOOD SANITATION INSPECTIONS		B-1
C. HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP) GUIDELINES		C-1
GLOSSARY		GLOSSARY-1
INDEX		INDEX 1

LIST OF TABLES

Table Number	Title	Page Number
2-1	Exclusions and restrictions for food employees and applicants	2-7
2-2	Removal of exclusions and restrictions for food employees and applicants	2-8
3-1	Minimum cooking temperatures and times	3-17
3-2	Oven parameters required for destruction of pathogens on the surface of roasts of beef and corned beef	3-17
3-3	Minimum holding times required at specified temperatures for cooking all parts of roasts of beef and corned beef	3-17
4-1	Utensil lead level limits	4-13
6-1	Captured velocity.....	6-6
12-1	Inspection and intervention frequency	12-10
C-1	Hazardous microorganisms and parasites grouped on the basis of risk severity	C-16
C-2	Main materials of concern as physical hazards and common sources	C-16
C-3	Types of chemical hazards	C-17
C-4	Sandwich shop risk assessment	C-18
C-5	Alternative cooking time and temperature combinations for ground beef	C-18

LIST OF FIGURES

Figure Number	Title	Page Number
3-1	Clean tableware	3-16
3-2	DA Label 177, Pre-Prepared Food (Sample)	3-16
3-3	DA Label 178, Leftover—Use within 24 Hours (Sample)	3-16
12-1	Routine Food Establishment Inspection Report (Sample)	12-11
12-2	Routine Food Establishment Inspection Report (Sample)—Continued	12-12
12-3	Comprehensive Food Establishment Inspection Report (Sample)	12-13
12-4	Comprehensive Food Establishment Inspection Report (Sample)—Continued	12-14
12-5	Food Establishment Sanitation Inspection—Remarks Form (Sample)	12-15
B-1	Food Establishment Risk Assessment Survey (Sample)	B-3
B-2	Food Establishment Risk Assessment Survey (Sample)—Continued	B-4
C-1	Process Step	C-9
C-2	Step Process Information	C-9
C-3	Connecting Operations	C-10
C-4	Loops or Side Operations	C-10
C-5	CCP Decision Tree	C-11
C-6	Tabulation for an HACCP Plan	C-12
C-7	Hazard Analysis Critical Control Point Monitoring Report (Sample)	C-13
C-8	Hazard Analysis Critical Control Point Monitoring Report (Sample)—Continued	C-14
C-9	Hazard Analysis Critical Control Point Monitoring Report (Sample)—Continued	C-15